

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

12th October
AGM + Talk on Edwin Hubble
Andrew Steel
AAS
Talk will be online

EDITORIAL

The announcements last week that the current state of play w.r.t. COvid is going to last at least another six months has proved rather depressing as it suggests that there will be no face to face meetings this session. We have sort of planned for this with the setup of meetings via Zoom but this will not be the same as meeting others. Hopefully we can look forward to a more positive 2021/22 season. I note that as mentioned in the last Spacewatch editorial that the 2021 AstroFest has been cancelled and will be replaced by an online virtual event. Although this may work for the talks that part of the meeting looking at equipment and meeting friends will now have gone. The next potential show is now the IAS in October 2021. Given the above if you would like to participate in the societies ongoing events it is vital that we have a current e-mail address for you so you can get the Zoom links etc.

I will apologise in advance that It is unlikely that I will be at the AGM as it is still likely that the Kelling Heath star party will be on unless there major lockdown additions, and I suppose we should be glad we don't live in Wales, and it so happens that our main meetings in the first part of this session coincide with New Moon I will likely be away at these. It should in theory be possible for me to run these remotely but we all know what internet coverage is like in remote areas. We are going to try and get Spacewatch out at the beginning of every month so it becomes a vehicle for giving out information on upcoming meetings and observing sessions. We are trialling a new moon phases map this issue thanks to Chris Holt. It comes from a German program and unfortunately has to be modified from the original German and mine is not up to the task so we will see if this continues to work. My thanks as well to the talented imagers in the group who provide the illustrations for the magazine.

Any way I hope you are all well and have made use of the clear but hazy skies we had in September..



M31, M32 and M110 – Steve Creasy

The editor of “SpaceWatch” is Owen Brazell, who would very much appreciate your stories & contributions. In particular whilst many fine images are being posted on the discussion group it would be nice to have some in the SpaceWatch. Please send any news, observations, photos, etc. to:

Mail: Owen Brazell, 15 Spinage Close,
Faringdon, Oxfordshire SN7 7BW or
owenb1367@gmail.com

NOTICE OF ANNUAL GENERAL MEETING

The Annual General Meeting for 2019/20 will take place on **Monday 12th October 2020** by **Zoom** at **8.00 p.m.**, and will be followed by a talk by Andrew Steel (Abingdon AS) on Edwin Hubble. Zoom details to follow.

Agenda

1. Apologies for absence
2. Minutes of the previous Abingdon AS AGM (held 13/5/2019)
3. Matters arising
4. Presentation of Committee's report
5. Presentation of Treasurer's report and Adoption of accounts
6. Membership fees for 2020/2021
7. Election of officers
 - i) Chairman
 - ii) Secretary
 - iii) Treasurer
 - iv) Publicity Officer

8. Election of other committee members (between one and six in number)
9. Any other business

Chris Holt, Secretary, Abingdon Astronomical Society

NOMINATIONS FOR ELECTIONS TO COMMITTEE

Nominations are sought for the posts of Chairman, Secretary, Treasurer, Publicity Officer and between 1 and 6 other committee members.

Under the Constitution of the Society, the “candidates for election shall be proposed and seconded by ordinary members of the Society and the nomination, including the candidate’s signature, submitted in writing to the Chairman at least four weeks prior to the Annual General Meeting”(para. 10.3.3). Ordinary members are all those who are not honorary members or affiliated members.

The Constitution goes on to say that, “in the event of there being no candidate for the election of an officer of the Society, or fewer than ten candidates for the election to the Committee, the Chairman may accept nominations given at the meeting” (para. 10.3.4).

Chris Holt, Secretary, Abingdon AS

COMMITTEE REPORT 2019/2020

This season has been one of the strangest in the society’s history with the Covid-19 virus stopping most of the society’s activities after the March meetings. We took the risk of having both the March meetings although perhaps as expected the turnout for the beginners meeting was low. We did have a good program of meetings up until the end of March and my thanks to those who helped with the beginners meetings and sticking out until it was no longer possible to hold meetings. We did our best by increasing the size of Spacewatch and moving its publication date to the beginning of the month to keep people abreast of what the society was doing. The society perhaps did not react as fast as some others to moving to online meetings for the rest of the programme but this is being rectified for the new season. The committee held a number of meetings during the summer recess (via Zoom) to try and see how we should move the society forwards until

Covid allows us to resume physical meetings. Unfortunately, the church hall in which we currently meet is not likely to allow us back, probably at least until 2021, and the new 'rule of 6' regulations effectively prevent club meetings. So it is likely that we are going to have to rely on Zoom to hold these meetings.

On the occasions where weather has permitted (3) this year’s observing sessions have proved to be popular. This is down to the hard work of Trevor Pitt and Steve Creasey who organise these. The Committee would like to thank Trevor Pitt and Steve Creasey for organising the observing sessions and making them a success. As with the beginners meetings Trevor’s retirement means that we need someone to take over the observing sessions and although we will no longer have such precise weather forecasts we really do need two people to help organise these events and any volunteers would be very welcome. Steve is currently acting as SPOC for these. The new Tubney site has proved to be better than the old one in terms of the hardstanding. It is unlikely that we will be holding any physical observing sessions again until 2021.

Oxford University held a single Stargazing Live event this year which we attended with a stand and scopes. Unfortunately the weather was not favourable but the free astrophotos with the Society’s details continues to be popular with the visitors. About 1200 visitors enjoyed the event My thanks to Ian, Steve and Clifford for providing the images for these postcards and to the others that supported the event.

After March all outreach activities were cancelled and as such we were not able to participate in the ATOM festival in Abingdon as it was cancelled.

It is very gratifying that we have such an enthusiastic membership that is willing to share their enjoyment of the hobby with others. The committee would like to extend its thanks to all those who have helped out at these events which have helped to raise the society’s profile.

The committee would like to thank Owen Brazell for editing the society's magazine, Spacewatch, this year. We would also like to thank Steve Creasy, Cristina and Gwyneth Hueter for their regular contributions to Spacewatch. Steve and Cristina have produced the Whats Up column and expanded it and our thanks to them for this. we now have a regular large size PDF version which is sent out to members. Our Facebook page has gone up to 317 likes and we continue to put out information via this medium as well as Twitter, email, the mailing list and the website. The number of paper Spacewatch's taken is going down so we may revisit this, certainly in terms of numbers printed in the future. In terms of Spacewatch we are no longer printing them as we have no way to distribute these but the PDF versions are now being sent out to all members as well as being available on the web site. They have also been made available to members of the Swindon Stargazers group.

The society also had a donation of equipment from Chris Jenkins family after he unfortunately passed away during the last session. My thanks to Trevor Pitt who collected this equipment and we have now sold on most of this and the monies raised have gone into the society funds. I would like to thank Trevor for his hard work on getting this equipment ready for sale and in doing up some of the equipment.

With the demise of Yahoo groups we now have our own mailing list setup on our webserver. My thanks to Chris Holt for the work in setting this up.

My thanks to Andrew Steel for getting the programmes printed

The society would not run as smoothly as it does without the time and effort of members who carry out some of the necessary tasks. The committee would like to thank Chris Holt and David Quick, both of whom do a lot of the background work that keeps the society running. We would also like to thank those of you who help out in the kitchen during the tea breaks,

A big thank you too to all those who help set up and put the tables and chairs back into storage at the end of each meeting. It means we can all get to the pub quicker after a meeting!

As ever the society is only as good as its membership. The healthy state of the society reflects well on you all. As always we are sure there are ways we could improve, such as what the society could do to help people better understand astronomy. If you have any suggestions or ideas then please let us know.

THE NIGHT SKY FOR OCTOBER 2020

Steve and Cristina

September saw the announcement that the presence of PHOSPHINE gas has been discovered in the atmosphere of Venus, indicating the possibility of some kind of life, probably microbial, living high in the atmosphere of the planet. As far as I am concerned it was always only a matter of time before such a discovery was/is made in our own solar system, and if this turns out to be the case, it will be one of the most momentous scientific discoveries of all time. However, this discovery is full of maybe's and we all remember the Allan Hills meteorite announcement so there is a lot more work to be done before this report is confirmed.

Fortunately for us Venus is visible all through October in the morning sky, rising around 03:30 on the 1st and 03:45 on the 31st, giving plenty of opportunity to view the planet of our possible alien neighbours.

I have very kindly been given a Darkstar 10" Dobsonian telescope, around 25 years old, that needs a bit of TLC, I am fitting a new focuser and will also be recoating the mirrors. Hopefully this will be a great scope to bring along to the observing evenings when/if we have them again.

Planets

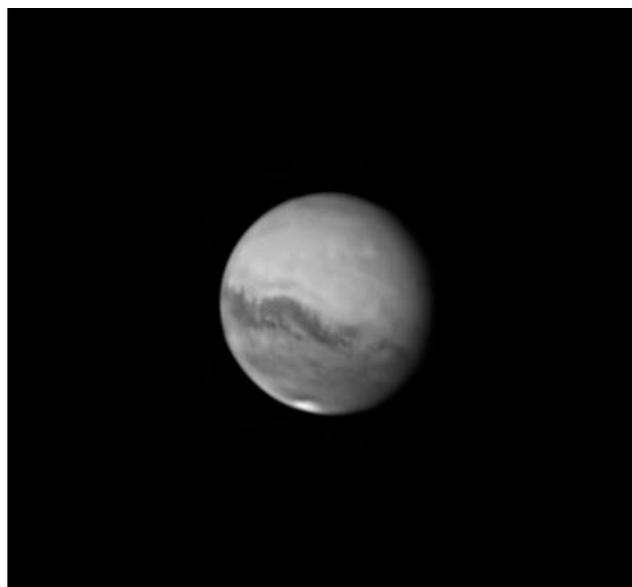
Mercury – Poorly positioned evening object most of the month. Inferior conjunction on 25 October. Mercury sits too close to the afterglow of sunset to be visible at northerly latitudes.

Mercury shifts out of the evening sky and into the morning sky during the second half of October and might become visible in the morning sky from northerly latitudes by late October.

Venus – Spectacular morning planet rising in excess of 3 hours before sunrise all month. There’s no way to mistake Venus for Mars, as Venus is only visible as a morning “star” in the eastern predawn/dawn sky. If you’re an early riser, up before daybreak, note where Mars sits low in the October morning sky. Then turn about-face, and you can’t miss Venus, by far the most brilliant star like object in the sky. If you’re up before dawn on October 2 or 3, you might even catch Venus’ furtive meeting with Regulus, the brightest star in the constellation Leo. The moon will pass 4 degrees north of Venus on October 13, at 23:57 Universal Time

Mars – In early October 2020, the waning gibbous moon meets with the dazzling red planet Mars. On October 2, look for the glorious evening couple – the moon and Mars – to rise in tandem in your eastern sky around nightfall or early evening. After the brilliant twosome rises, they’ll be out for the rest of the night, traveling westward across the night time sky. The moon and Mars climb highest up for the night after midnight, and then sit low in the west as dawn starts to colour the sky on October 3. At the favourable opposition on 13 October Mars shines at mag. -2.6 and 22.4 arcseconds across through the eyepiece.

Mars beams more brilliantly in October 2020 than it will for nearly another 15 years, as the red planet won’t showcase a brighter version of itself until September 2035. The brilliant moon won’t be able to subdue this planet’s lustre, as Mars (in October 2020) ranks as the 4th-brightest heavenly body in all the heavens, after the sun, moon and the planet Venus, respectively. In November 2020, however, the king planet Jupiter will reclaim its position.



- Mars John Napper

Jupiter – Evening planet that remains reasonably well placed but low from the UK. 5th planet outward, is a touch more than half Saturn’s distance from the sun. Nonetheless, Jupiter is the second farthest world that we can easily see from Earth. Jupiter in its faster and smaller orbit takes about 12 Earth-years to go around the sun full circle.

Saturn – Sits east of Jupiter and, like its inner neighbour, is well placed but low. Saturn, the sixth planet outward from the sun, is

the farthest world that you can easily see with the unaided eye. The farther away that a planet resides from the sun, the more slowly it travels and the longer its orbit. Saturn takes nearly 30 Earth-years to orbit the sun.

Because Jupiter and Saturn take so long to pass through all the constellations of the zodiac, a Jupiter-Saturn conjunction is the rarest of planet-planet conjunctions involving two bright planets. Conjunctions of Jupiter-Saturn recur in periods of 20 years.

The next Jupiter-Saturn conjunction will come in two months, on December 21, 2020. The last Jupiter-Saturn conjunction took place on May 28, 2000, and the next one after the upcoming Jupiter-Saturn conjunction December 21, 2020, will come on October 31, 2040.

Uranus – Well placed all month.

The moon will move away from Mars to pass to the south of the planet Uranus, and then to the south of the Pleiades Star Cluster. Most people need binoculars and a moon-free night to see Uranus. Use Mars and a sky chart to help you find Uranus when the moon has left the evening sky.

Neptune – Remains well placed for observation throughout October.

Because we're more or less between Neptune and the sun around now, Neptune is rising in the east around the time of sunset, climbing highest up for the night around midnight and setting in the west around sunrise. As viewed from Earth now, this world is in front of the constellation Aquarius. Although faint, is easily visible to the eye alone on a dark night, the moon-free evening hours offer a dark sky for viewing Neptune.

Neptune and Phi Aquarii are so close together on the sky's dome at present that the two readily fit within a single binocular field. In fact, you might see them together in a low-powered telescope, with blue-green Neptune offering a colour contrast to the ruddy tint of Phi Aquarii. Neptune is nearly 30 times fainter than the star Phi Aquarii.

Meteor Showers

The Orionid meteor Shower – takes place each year between about October 2 to November 7. That's when Earth is passing through the stream of debris

left behind by Comet Halley, the parent comet of the Orionid shower. The Orionids usually put out the greatest number of meteors in the few hours before dawn, and the expected peak morning is October 21. Best yet, the waxing crescent moon will set at early-to-mid-evening, providing dark skies for the 2020 Orionid meteor shower.

The Orionids aren't the year's strongest shower, and they're not particularly known for storming (producing unexpected, very rich displays). From a [dark location](#), in a year when the moon is out of the way, you might see 10 to 20 Orionids per hour at their peak. Will you see that many in 2020? Well ... maybe. There's always the element of uncertainty and possible surprise when it comes to meteor showers.

If you do see any Orionids in 2020, note that they're known to be extremely fast meteors, plummeting into the Earth's atmosphere at about 66 kilometres – 41 miles – per second. The meteors in this shower are on the faint side. But they make up for that; maybe half of the Orionid meteors leave *persistent trains*, or ionized gas trails that last for a few seconds after the meteor itself has gone.

Also, sometimes, an Orionid meteor can be exceptionally bright and break up into fragments.

Again, the peak morning is likely October 21. Do start watching in the days ahead of the peak, though. You might catch an Orionid meteor or two before dawn over the coming days.

How will you know it's an Orionid? You'll know because it'll come from the shower's radiant point in the constellation of Orion.

The Draconid Meteor Shower – Draco the Dragon is now spitting out meteors, also known as shooting stars. This is one shower that's best to watch at nightfall or early evening, not after midnight. No matter where you are on Earth, watch as close to nightfall as possible. The shower is active between October 6 and 10. The best evening to watch is likely October 7. This shower favours the Northern Hemisphere, but

Southern Hemisphere observers might catch some Draconids, too. Fortunately, the waning gibbous moon won't rise until mid-to-late evening. Look for these meteors for a few hours, starting at nightfall.

Even at northerly latitudes, the Draconids are typically a very modest shower, offering only a handful of slow-moving meteors per hour. But exceptional displays have taken place over the years. The Draconid meteor shower produced awesome meteor displays in 1933 and 1946, with thousands of meteors per hour seen in those years. European observers saw over 600 meteors per hour in 2011.

Two years ago, in 2018, was also a favourable year because the new moon closely aligned with the peak date of the Draconids. But that's not all. The Draconids' parent comet – 21P/Giacobini-Zinner – reached perihelion, its closest point to the sun, in 2018, coming closer to Earth than it had in 72 years.

Those two factors added up to an outburst of Draconids for Europe in 2018. No outburst is expected this year. But meteor showers are notorious for defying the most carefully crafted forecasts. So you never know for sure what's up in a meteor shower unless you look.

Comets

141P-F/Machholz will become visible around 20:05 (BST) as the dusk sky fades, 31° above your southwestern horizon. It will then sink towards the horizon, setting at 23:44.

Orbital period of 5.2 years.

Currently magnitude 9.8 in the constellation of Ophiuchus, but brightening, peaking at mag 5.3 on 2 Nov 2020

(Note that these predictions may rely on duff data from the MPC and I have seen no observations of this comet suggesting it is anywhere near this bright. The current BAA predictions put it around 13.8 and it does not yet seem to have been recovered – Ed)

11P/Tempel-Swift-LINEAR is visible all night. It will become visible around 20:05 (BST) as the dusk sky fades, 42° above your eastern horizon. It will then reach its highest point in the sky at 00:10, 70° above your southern horizon. It will be lost to dawn twilight around 05:33, 30° above your western horizon.

Orbital period of 5.9 years.

Currently magnitude 9.8 in the constellation of Pegasus, but brightening, peaking at mag 8.9 on 10 Nov 2020

(Also some debate about the brightness of this comet with some estimates putting it currently fainter than 17th mag and unlikely to get brighter than 17th mag even as it passes 0.36AU from the Earth in November)

There are also a couple of other possible comets coming at the end of the month.

C/2020 M3 (ATLAS) is currently trucking through Fornax and is about mag 9 or so. This may brighten up when it comes north at the end of the month as it goes through Orion.

We also have C/2020 P1 (NEOWISE) – yes NEOWISE is at it again and this comet is also currently in the south. It is however brightening as it moves north so and may reach 8th mag or so, however the nucleus of this comet is small and it appears to be below the Bortle limit for survival at perihelion so it may not make it north.

However charts for both of these are given at the end of the newsletter.

Deep Sky Objects

We will be trying to go through this list in the October (zoom) observing session as well as a couple of planets and maybe a comet, I hope you are able to join us.

NGC 7479 – The Superman Galaxy, 105mly away in the constellation of Pegasus

NGC 7331 – A Barred Spiral Galaxy, 50mly away in Pegasus, the brightest in The Deer Lick Group.

M33 Triangulum Galaxy, Spiral galaxy 2.73mly away in Triangulum

NGC 247 Intermediate spiral galaxy 11mly away in Cetus, it is a member of the Sculptor cluster.

M15 The Great Pegasus Cluster – Globular cluster

NGC 6992 The Eastern Veil Nebula in Cygnus

IC 3568 The Lemon Slice Nebula, Planetary nebula in Camelopardalis

NGC 6543 The Cats Eye Nebula, Planetary nebula in Draco

NGC 40 The Scarab Nebula (BowTie Nebula) , Planetary nebula in Cepheus

NGC 188 Open Cluster in Cepheus

Clear skies

YouTube channels and YouTube is also a library for an awful lot of other astronomical presentations.

AstroFest 2021 – as expected this has been cancelled but there will instead be an online event called worldwide astrofest in February. Details on worldwideastrofest.com

Observing evening: As the Covid situation has not really improved and physical observing sessions cannot meet social distancing guidelines we have decided to look at virtual observing sessions for the near future, starting in October

Beginners meetings: As we no longer have access to our hall due to the Covid situation we are going to be running a series of Zoom beginners meetings. The next one will take place on Oct 26th and the topics to be covered include How to Build a Star and an update on BeliColumbo

OTHER ONLINE TALKS

All meetings for the first half of the session will now be online using Zoom.

The Virtual Astronomy Club:

<https://www.star-gazing.co.uk/WebPage/virtual-astro-club/> who are offering free 7 pm Zoom meetings on a Tuesday and Thursday. PDFs of recent talks are here:

https://www.dropbox.com/sh/9k7medirj1gkwlt/AA_C4dqakRuUiYIJHgz0KKqma?dl=0

The BAA are also doing virtual webinars which are open to all at <https://www.britastro.org/meetings>

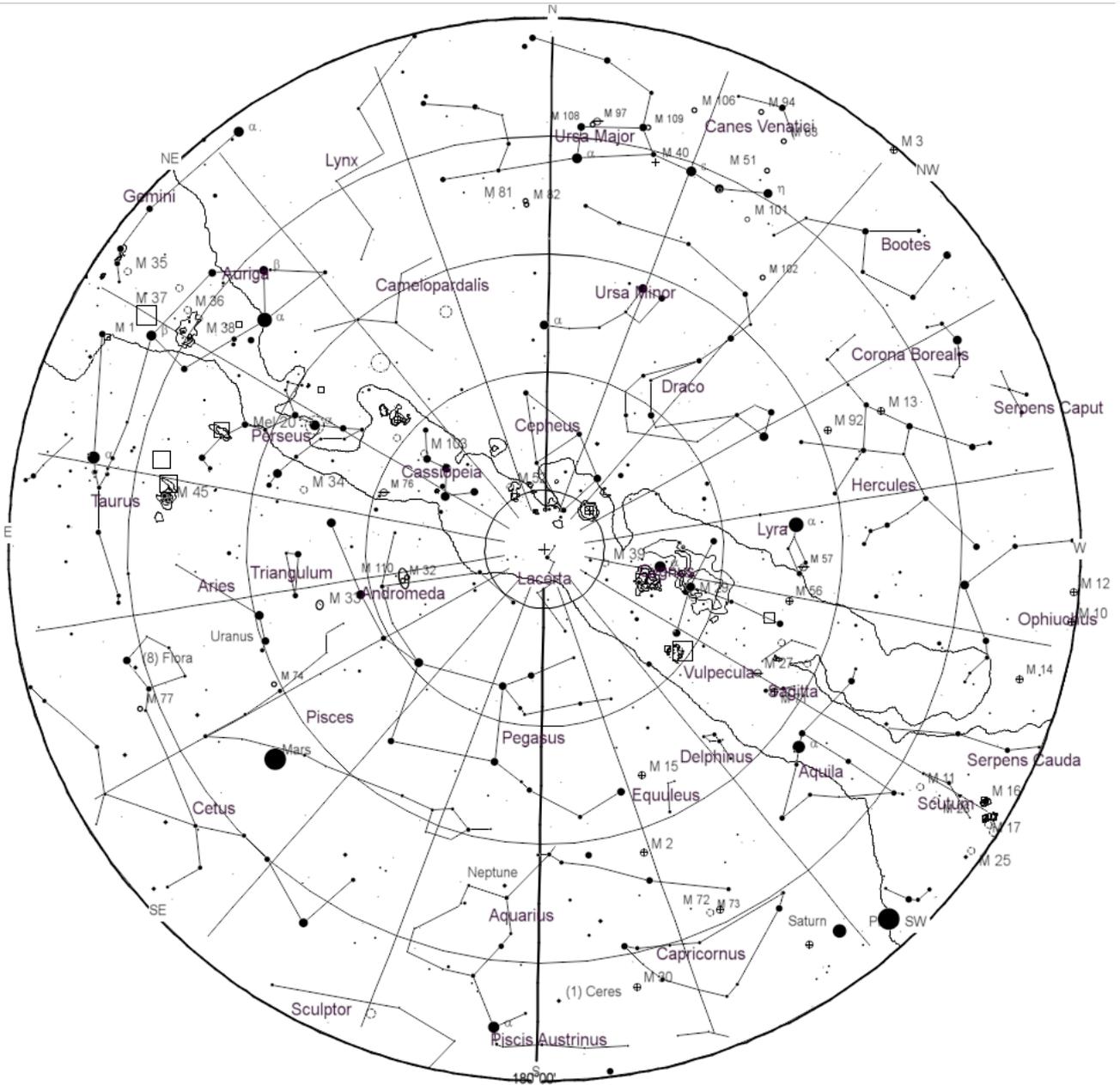
Look for the webinars page. They are also doing some presentations via Zoom as well which can be seen on their web page. If you miss them then they are available on their YouTube channel afterwards

There are a number of other organisation such as the RASC (Royal Astronomical Society of Canada) who are also putting presentations up on their

New Mailing List: If you have not already done so, why not subscribe to our new email mailing list. The list is called 'aaslist'. Members use the list to alert each other about celestial events and to chat about amateur astronomy. The list is quite active, with several messages most weeks. This will also in the current circumstances be the main form of information going forward To subscribe to aaslist and to read through previous messages click on: <http://lists.abingdonastro.org.uk/mail.cgi/list/aaslist>

STAR CHART

The night sky at 22:00 (BST) Tuesday 15th October 2020



MOON PHASES: 2020

Moon phases and solar and lunar rise and set times for October 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1  ↑19:06 ↓06:15	2  ↑19:21 ↓07:23	3  ↑19:36 ↓08:30
4  ↑19:52 ↓09:38	5  ↑20:12 ↓10:46	6  ↑20:36 ↓11:55	7  ↑21:07 ↓13:02	8  ↑21:47 ↓14:06	9  ↑22:38 ↓15:03	10  ↑23:42 ↓15:52
↑07:19 ↓18:29	↑07:21 ↓18:27	↑07:22 ↓18:25	↑07:24 ↓18:23	↑07:26 ↓18:20	↑07:27 ↓18:18	↑07:29 ↓18:16
05:21 20:27	05:22 20:25	05:24 20:23	05:26 20:20	05:28 20:18	05:29 20:16	05:31 20:14
11  ↑16:31 ↓18:14	12  ↑00:56 ↓17:02	13  ↑02:17 ↓17:28	14  ↑03:42 ↓17:49	15  ↑05:09 ↓18:09	16  ↑06:36 ↓18:28	17  ↑08:06 ↓18:49
↑07:31 ↓18:14	↑07:33 ↓18:11	↑07:34 ↓18:09	↑07:36 ↓18:07	↑07:38 ↓18:05	↑07:39 ↓18:03	↑07:41 ↓18:01
05:33 20:11	05:34 20:09	05:36 20:07	05:38 20:05	05:40 20:03	05:41 20:01	05:43 19:59
18  ↑09:36 ↓17:59	19  ↑11:05 ↓17:57	20  ↑12:28 ↓17:55	21  ↑13:42 ↓17:53	22  ↑14:40 ↓17:51	23  ↑15:25 ↓17:48	24  ↑15:58 ↓17:46
↑07:43 ↓17:59	↑07:45 ↓17:57	↑07:46 ↓17:55	↑07:48 ↓17:53	↑07:50 ↓17:51	↑07:52 ↓17:48	↑07:53 ↓17:46
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↑06:55 ↓16:44	↑06:57 ↓16:42	↑06:59 ↓16:40	↑07:00 ↓16:38	↑07:02 ↓16:36	↑07:04 ↓16:34	↑07:06 ↓16:32
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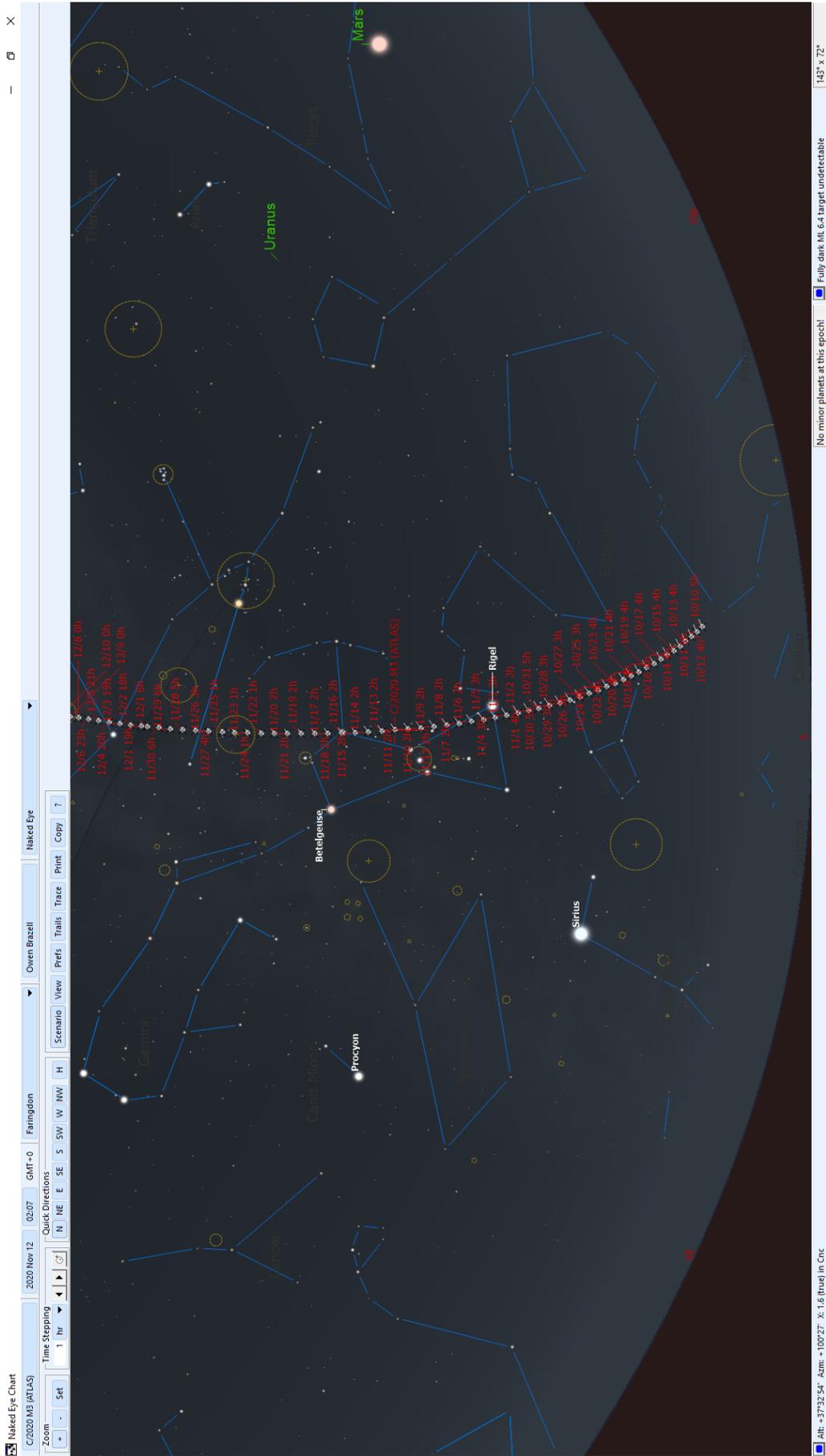
NGC 281 – PacMan nebula – David Mainwaring



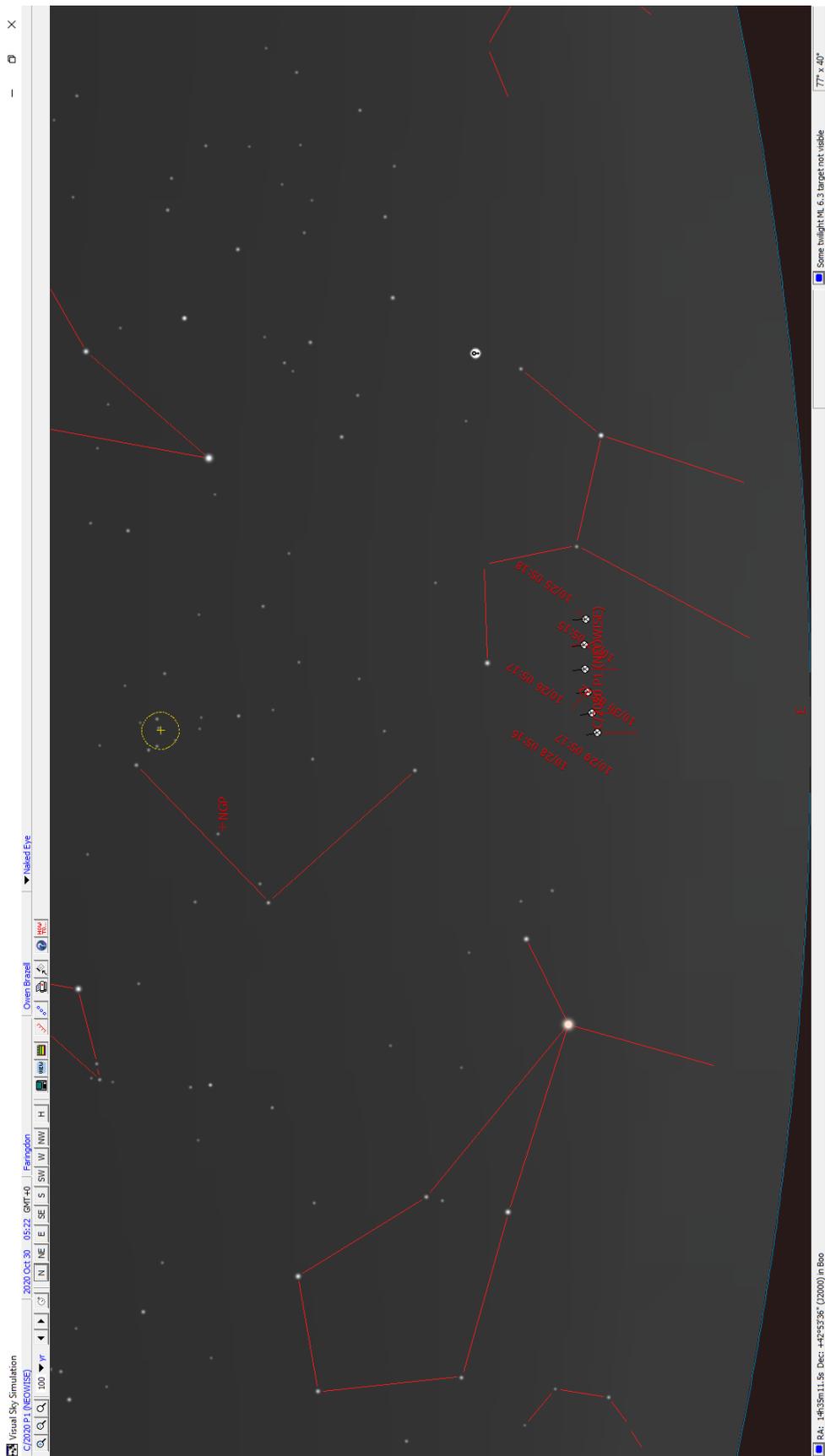
NGC 7635 – The Bubble Nebula – Roland Goodhay



M27 – The Dumbbell Nebula – Roland Goodhay



Path for C/2020 M3 (ATLAS)



Path for C/2020 P1 (NEOWISE)

Beginners Meeting Program 2020/2021

2020/21	Long Talk	Short Talk
SEP	Mars	Imaging V Visual Telescopes
OCT	How to Build a Star	Update on Bepicolombo
NOV	Open Clusters	Star Hopping
DEC	DSLR Imaging Part 2	Constellation
JAN	Making the Elements	Stellarium
FEB	Types of Telescopes	Asterisms
MAR	A space mission TBA	Constellation
APR	Celestial Co-ordinates	Star Spectra
MAY	Dwarf Planets,Asteroids, & Comets	Sun in White Light
JUN	Imaging Planets	Astronomy 150-1543 AD: A 1400 year wait, and then Copernicus'